

Final Project

30 points

Congratulations! You (and 1-2 other “business associates”) just inherited a small, fertile, forested island. Your goal is to create a fairly self-sufficient, sustainable community on the island. However, there are a few stipulations regarding its use.

- About $\frac{1}{4}$ of the island must remain forested as a nature preserve, as it is the only known habitat for a very rare, endangered, and now protected species of animal
- About $\frac{1}{4}$ of the island must be designated as farmland to provide food
- The remaining $\frac{1}{2}$ of the island must be developed for homes, industries, transportation, other services, etc.
- Directly in the middle of the island is a small pond that must be preserved
- Throughout the island, there are a series of creeks and streams that flow into the surrounding ocean. While they must also be preserved, you can decide how they will be incorporated into your community.
- Your community must be energy efficient, supplying enough energy for its residents
- In your design, you must also consider natural resources and pollution levels

Written Plan(25 pts)

- Answer the numbered questions in each section of the packet provided
- Use your notes to help you
- Be specific and use detail to explain your answers

Map(5 pts)

- Complete the map according to the directions below as a “blue print” of your land use
 - Color code your map according to the following key:
 - Green = Forest (nature preserve)
 - Yellow = Farmland
 - Red = Development (homes, industries, transportation, recreation)
 - Blue = Water
 - Draw and label roads, buildings, parks, and other notable features

Names _____

Written Plan (25 points)

Answer each of the following questions. Give as much detail as possible! Use your notes and other activities from class to help you as needed.

A. Resources

a. Soil

1. How do you plan on making sure the soil stays fertile?

2. How do you plan on reducing erosion?

b. Water

3. How do you plan on providing clean drinking water for your community?

4. How do you plan on making sure water is conserved in your community?

c. Energy

5. What specific types of renewable and/or nonrenewable energy sources do you plan on using to power your community?

6. How do you plan on implementing these energy resources within your community?

B. Pollution

a. Water

7. How will you minimize both point and nonpoint sources of pollution?

8. How will you minimize eutrophication in your pond?

b. Air

9. How will you reduce AND clean up air pollution? (consider types of pollutants, smog, greenhouse gases, the ozone layer, control strategies)

10. How will you prevent acid precipitation?

c. Land waste

11. How will you manage waste (garbage collection, landfills, recycling..)?

d. Pests

12. How will you manage pests in your community?

When answering the questions in Part C, be sure to first consider your responses to Parts A and B.

C. Land Use

a. Water

- Ponds

13. Explain the impact your pond will have in your community.

- Streams/creeks

14. Explain how your streams/creeks will be used in your community.

b. Forest

- Plants

15. What types of plants are in your forest AND why are they important to your community?

- Animals

16. What types of animals are in your forest AND why are they important to your community? (Be sure to include information about the rare, endangered, protected species)

c. Farmland

- Crops

17. What types of crops will you grow on your farm and WHY?

- Livestock

18. What types of animals will you breed on your farm and WHY?

d. Development

- Homes

19. Explain the features of a typical house in your community.

- Industries

20. Explain what types of factories exist in your community.

- Transportation

21. Explain how people and products will be transported throughout your community (and potentially off of the island).

- Recreation

22.Explain the recreational attractions (parks/playgrounds, museums, stadium, zoo, theme park, etc) that exist in your community.

- Other Services

23.Explain the safety services provided in your community. (fire, police, hospitals, etc.)

24.Explain the school system in your community.

25.Explain what types of stores/malls exist in your community.

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Evaluation
10 pts

1. What specifically did you contribute to this project?
2. What did you find challenging about this project?
3. What would you do differently if you had to go back and do it again?
4. What did you learn about environmental science from this project?
5. What did you learn from this project that you think you can apply to your life in the future?